



Improvement of Mass Calculations for the Neutron Rich $A \sim 32$ Nuclei

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In previous works anomalies were observed in binding energies for the island of inversion nuclei centered at $Z=11$, $N=21$ by the comparison of theoretical calculations and experiment. An attempt was made in this work using an improved term of shell corrections to observe the evolution of these anomalies. This term was added to the macroscopic part of the previous mass formula and binding energy calculations have been carried out. A

distribution of these latter on a (N,Z) chart has indicated that the calculated values increase with the increase of N for all values studied as for those of experiment except the value of $Z=10$. This result shows the presence of these anomalies only in the line $Z=10$ and their absence in the lines $Z=11$ and 12 . Although this shell correction includes a term representing an interaction between protons and neutrons of valence shells, but it is insufficient to study this deformed mass region.

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